

Claims

1. A method for producing a carrier for the determination of analytes, comprising the steps:
 - 5 (a) providing a carrier,
 - (b) passing liquid with building blocks for synthesizing polymeric receptors over the carrier,
 - 10 (c) site- or/and time-specifically immobilizing the receptor building blocks on respective predetermined zones on the carrier and
 - (d) repeating steps (b) and (c) until the desired receptors have been synthesized on the respective predetermined zones,
 - 15 **characterized in that** hapten groups are applied to the carrier before, during or/and after the synthesis of the receptors.
2. A method for the quality control of receptor syntheses on a carrier, comprising the steps;
 - 20 (a) providing a carrier,
 - (b) applying in planar fashion hapten groups to the carrier surface,
 - (c) carrying out a receptor synthesis on the carrier,
 - 25 (d) contacting with a hapten detection reagent which permits detection of hapten groups,
 - (e) evaluating the hapten group detection on the carrier and
 - 30 (f) correlating the result of the evaluation with the quality or/and efficiency of the receptor synthesis.
3. A method for the quality control of receptor syntheses, comprising the steps:
 - 35 (a) providing a carrier,
 - (b) carrying out a receptor synthesis on the carrier, with hapten groups being incorporated during the synthesis into the

receptor molecules at predetermined positions,

(c) contacting with a hapten detection reagent which permits detection of hapten groups,

5 (d) evaluating the hapten group detection on the carrier and

(e) correlating the result of the evaluation with the quality or/and efficiency of the receptor synthesis.

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4. The method as claimed in any of claims 1 to 3, **characterized in that** a microfluidic carrier with channels, preferably with closed channels, in which predetermined zones with immobilized
15 receptors are produced is used.

5. The method as claimed in any of claims 1 to 4, **characterized in that** the receptors are selected from biopolymers such as, for example, nucleic
20 acids, nucleic acid analogs, proteins, peptides and carbohydrates.

6. The method as claimed in any of claims 1 to 5, **characterized in that** the receptors are selected
25 from nucleic acids and nucleic acid analogs.

7. The method as claimed in any of claims 1 to 6, **characterized in that** a carrier is produced with a plurality of, preferably with at least 50 and
30 particularly preferably with at least 100, different receptor zones.

8. The method as claimed in any of claims 1 to 7, **characterized in that** the hapten groups are
35 selected from organic molecules having a molecular weight of up to 2,000, which are recognized by a specific binding partner through a high-affinity interaction.

9. The method as claimed in claim 8, **characterized in that** the hapten groups are selected from digoxin, digoxigenin, dinitrophenol and biotin or biotin analogs.
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10. The method as claimed in any of claims 1 to 9, **characterized in that** the hapten groups are applied in a planar fashion to the carrier.
- 10 11. The method as claimed in any of claims 1 to 10, **characterized in that** the hapten groups are applied in a site-specific fashion to the carrier.
- 15 12. The method as claimed in any of claims 1 to 11, **characterized in that** the hapten groups are applied directly to the surface of the carrier.
- 20 13. The method as claimed in any of claims 1 to 12, **characterized in that** the hapten groups are inserted into spacer molecules which are disposed between the carrier surface and the receptors.
- 25 14. The method as claimed in any of claims 1 to 13, **characterized in that** the hapten groups are inserted at one or more positions into the receptors synthesized on the carrier.
- 30 15. The method as claimed in any of claims 1 to 14, **characterized in that** the hapten groups are applied reversibly.
- 35 16. The method as claimed in any of claims 1 to 14, **characterized in that** the hapten groups are applied irreversibly.
17. The use of hapten groups for controlling the synthesis of receptors on a carrier.